Available in English Only
Disponible en Anglais seulement

INTERNATIONAL REVIEW OF INTEGRATED COASTAL ZONE MANAGEMENT

VOLUME I: ANNOTATED BIBLIOGRAPHY

PREPARED BY:
MELTZER RESEARCH AND CONSULTING
1331 BRENTON STREET
HALIFAX, NOVA SCOTIA
CANADA, B3J 2K5
emeltzer@fox.nstn.ca

Prepared for:
DEPARTMENT OF FISHERIES AND OCEANS
CANADA
1996

Literature Review to Identify International ICZM Models

COMPARATIVE STUDIES/CASE STUDY COLLECTIONS

GENERAL COASTAL MANAGEMENT LITERATURE AND GUIDELINES

SCIENCE ISSUES

INDIGENOUS ISSUES

COMMUNITY-BASED/PUBLIC PARTICIPATION

103-01451/

COMPARATIVE STUDIES/CASE STUDY COLLECTIONS (Top)

Awosika, L., Boromthanarat, S., Comforth, R., Hendry, M., Koudstall, R. Ridgley, M. Sorenson, S. ,De Vrees, L. and Westmacott, S. 1993. Management Arrangements for the Development and Implementation of Coastal Zone Management Programmes. Organising Committee. International Conference on Coastal Zone Management, The Netherlands, 1-5 November 1993.

CAMPNET. 1989. The Status of Integrated Coastal ZoneManagement: A Global Assessment. University of Miami, Miami.

CAMPNET. 1991. The Status of Integrated Coastal ZoneManagement: A Global Assessment. University of Miami, Miami.

Clark, J., (ed.) 1985. Coastal Resources Management: Development Case Studies. Renewable Resources Information Series, Coastal Management Publication No. 3. Prepared by Research Planning Institute, Inc. Columbia, SC for U.S. National Park Service and U.S. Agency for International Development.

Chung, C. and Hildebrand, L.P. 1993. A Multinational Assessment of Coastal Zone Management Activities in OECD Countries. Coastal Zone 93' Proceedings of the Eighth Symposium on Coastal and Ocean Manageement, New Orleans, Louisiana, July 19-23, 1993. American Society of Civil Engineers, New York, pp. 2638-2653.

Chung, C. and Hildebrand, L.P. 1994. A multinational assessment of coastal zone management in OECD countries. Ecodecision . January, 1994. pp. 44-49.

Coastal Society. 1993. Our Coastal Experience: Assessing the Past, Confronting the Future. Proceedings of the Twelfth International Conference of the Coastal Society, 21-24 October 1990, San Antonio. The Coastal Society. Glouster, Mass.

Day, J.C. and Gamble, D.B. 1990. Coastal zone management in British Columbia: An institutional comparison with Washington, Oregon, and California. Coastal Management. 18 (2) pp. 115-141.

The basis for coastal zone management in the United States is established in legislation. In comparison, Canadian federal and provincial governments have adopted a piecemeal approach for managing a variety of concerns examined here: water quality, ecological protection, public access, aesthetics, natural hazards, and water dependency. As a result of this approach, the British Columbia coastal zone is showing signs of stress. For example, major shellfish harvesting areas are being lost to water pollution; ecologically sensitive habitats are being consumed by urban, commercial, and industrial expansion; recreation and tourism opportunities are being impaired by clear cutting and other inappropriate developments; and infrastructure is allowed in flood- and erosion-prone areas. New federal and provincial policies, legislation, institutions, and experimentation with local and regional integrated resource planning are required to better govern the coastal zone.

Hamann, R.G. 1987. Selected Annotated Bibliography: Coastal Resource Management. Florida Sea Grant College Report No. 89. Gainesville, Florida

This bibliography of selected references to coastal resource management, 1967-1985, is intended for use by local government officials, regional planners, state agency personnel, and private citizens who are developing comprehensive plans, considering development, or drafting local or other

ordinances.

Hildreth, R.G. 1995. Sustainable Use of Marine and Coastal Resources Under UNCLOS and UNCED: Some Austrailan, Canadian, and U.S. Comparisons. Paper for Ocean Governance Study Group Meeting, Honolulu, HI, January 9-11, 1995.

Jackson, M.E. and O'Donnell, M. 1993. Responsible Governmental Structures: Coastal Management in the United States, Great Britain, and Austrailia. Coastal Zone 93'. Proceedings of the Eighth Symposium on Coastal and Ocean Manageement, New Orleans, Louisiana, July 19-23, 1993. American Society of Civil Engineers, New York, pp. 773-790.

Jones, R.L. 1989. Shifting sands: a comparison of English and American coastal zone management programs. Hastings International and Comparative Law Review. 12. pp. 495-524.

Focuses on the issue of regulatory takings. Includes US Supreme Court decisions, federal and state legislation, statutes and international agreements in Great Britain.

Juhasz, F. 1991. An international comparison of sustainable coastal zone management policies. Marine Pollution Bulletin. 23. pp. 595-602.

Management of coastal resources includes a combination of sectoral and environmental policies. To implement a successful sustainable policy in any coastal region and for the country as a whole a high degree of integration between development and environment policies is an essential prerequisite. OECD governments at all levels, including at the international level, recognise the need for integration, but improvements in sustainable coastal resource management, i.e. maintaining the quality and quantity of the services flowing from coastal resources, have been limited. This paper examines, on the basis of certain criteria, the performance of OECD countries in coastal zone management and suggests measures to improve integration with the aim of promoting sustainable management of coastal resources.

Organization for Economic Cooperation and Development. 1993. Coastal zone management: Selected case studies. Organization for Economic Coop. and Development, Paris.

The coastal zone in OECD countries is subject to intense pressure from conservation and development interests. Consequently, there is an increasing awareness that sustainable management of this biologically rich zone should be based on an integrated approach which encompasses institutional arrangements, a range of policy instruments and international co-operation. This volume, which is a companion to the OECD publication Coastal Zone Management: Integrated Policies, presents ten case studies from across the OECD area which illustrate coastal zone problems and resources, coastal management approaches which promote policy integration, and examples of regional co-operation in international coastal zone management.

Olsen, S.B. 19?? A Learning Approach to the Managment of Coastal Ecosystems: Lessons from High and Low Income Nations. Coastal Resources Center, University of Rhode Island.

Sorensen, J. and Brandani, A. 1987. An overview of coastal management efforts in Latin America. Coastal Managment. 15 (1), pp. 1-25.

This article provides five criteria for comparing the nineteen coastal countries within Latin America in terms that are relevant to the management of coastal resources or environments. The five criteria are: coastal orientation; issues motivating program creation; stage in program evolution;

governance arrangements; and management strategies. Each of these criteria is described and the articles in this issue are placed in context with them. Based on the definition of coastal area management given, five programs are underway in Latin America. Future directions and prospects for coastal area management in the region are discussed.

Sorensen, J. 1993. The International Proliferation of Integrated Coastal Zone Management Efforts. Ocean and Coastal Management. 21 (1), pp. 45-81.

Over 140 integrated coastal zone management programs have been implemented by about 57 nations. The greatest proliferation of such programs in the last decade has been in developing nations. Trends in the regional distribution, evelopment, coordination, and effectiveness of coastal zone management efforts are surveyed. The five stages of program evolution, the support of these programs by international donor institutions, and scope for program expansion are addressed.

GENERAL COASTAL MANAGEMENT LITERATURE AND GUIDELINES (Top)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Barston, R.P. 1994. International dimensions of coastal zone management. Ocean and Coastal Management. 23 (1).

Developments in international agreements, codes and their instruments since the late 1980s suggest major changes in approaching the control of marine pollution compared to those of a decade earlier. The conclusion of international agreements such as the OPRC Convention, revised Oslo Paris Conventions and decisions taken in the London Dumping Convention, North Sea Ministerial Conference, International Maritime Organization and other fora are in part based on revised concepts of pollution, environmental damage and management. The changing approach can be seen in the development of concepts such as precautionary action, best available technology, translocation and environmental restoration. Furthermore these ideas are increasingly reflected in coastal zone measures such as contingency planning, oil spill response, vessel traffic regulation, management and other coastal regulations. Enhanced interest in integrated planning, safety and environmental management in port and coastal areas has revived interest in institutional arrangements and highlighted the need for improved information systems to implement international standards and agreements effectively.

Basta, D.J. and Ehler, C.N. 1994. Bridging the Gap Among Science, Management, and Policy. Coastal Zone Canada '94, Cooperation in the Coastal Zone, Halifax, NS, Canada. (eds. Wells, P.G. Ricketts, P.J.). pp. 847-859.

Beatley, T. 1991. Protecting Biodiversity in Coastal Environments - Introduction and Overview. Coastal Management. 19 (1), pp. 1-19.

In recent years, less attention has been paid to threats to coastal and marine biodiversity than to biodiversity in terrestrial habitats. The threats to coastal biodiversity are numerous and they include air and water pollution, over-exploitation and harvesting; the introduction of exotic species; the loss of habitat due to urbanization and other land use changes; and the potentially serious effects of global climate change. These threats suggest the need for action at jurisdictional and governmental levels. Major components include the need for comprehensive management approaches, the expansion of parks and protected areas, restoration and mitigation, multinational and international initiatives, and efforts to promote sustainable development and sustainable lifestyles.

Boelaert-Suominen, S. and Cullinan, C. 1994. Legal and Institutional Aspects of Integrated Coastal

Area Management in National Legislation. FAO Legal Office, Rome.

A study is made of legislation related to integrated coastal area management (ICAM), a relatively young discipline with most of the legislation enacted since 1980, with many new laws still being planned, drafted or refined. The study aims to create an initial map of this emerging legislative field and also to promote further consideration, debate and development of the legal issues and principles involved, particularly those of international relevance. An examination is made as to why various countries have introduced legislation to promote ICAM and also as to what these laws seek to achieve and the main legal issues which arise. The legislation of a wide range of jurisdictions worldwide is reviewed to highlight how different jurisdictions have dealt with these issues. Bondareff, J.M. et al. 1993. Building Coalitions on the Coast. In. Coastal Zone 93'. Proceedings of the Eighth Symposium on Coastal and Ocean Management, New Orleans, Louisiana, July 19-23, 1993. American Society of Civil Engineers, New York, pp. 3016-3023.

Born, S.M. and Miller, A.H. 1988. Assessing networked coastal zone management programs. Coastal Management. 16 (3), pp. 229-243.

During the early development of the national coastal zone management program there was no federal prescription with regard to how coastal states should proceed in establishing their programs institutionally. An approach that relied on existing agencies and authorities and improved policy development and coordination; was described as "networking." Many coastal advocacy groups, academics, and bureaucrats viewed the networked model with skepticism. With more than a decade of experience, the authors review and critique the efficacy of this approach to coastal management. Lessons learned from experimentation with networked coastal management programs may provide important lessons for other regional land and water resources management efforts.

Bowen, G.E. and Gangaware, T.R. 1988. Institutional barriers to environmental protection programs. An assessment methodology. Proceedings of the Symposium on Coastal Water Resources, Wilmington, NC . (eds. Lyke, W.L. and Hoban, T..J.). American Water Resources Association. pp. 587-598.

The paper focuses on six dimensions of institutional barriers, consisting of thirty propositions, which are hypothesized to represent the major problems and constraints to implementing environmental programs. An implementation probability matrix is developed which can be used to evaluate the probability of environmental legislations, plans, programs, and projects. The matrix is a hypothetical construct which will assist in evaluating the major impediments to implementing environmental programs.

Brower, D.J. and D.S. Carol, 1987. Managing Land-use Conflicts: Case Studies in Special Area Management. Duke University Press, Durham, NC.

Burbridge, P.R., Dankers, N. and Clark, J.R. 1989. Multiple-Use Assessment for Coastal Management. Coastal Zone 89' Proceedings of the Sixth Symposium on Coastal and Ocean Management Charleston, SC, USA. July 11-14, 1989. pp. 33-45.

Burbridge P. R. & Burbridge V. 1992. Review of the Experiences with Integrated Coastal Management. UNEP, IUCN, and WWF.

Caddy, J.F. 1990. Enclosed and Semi-enclosed Seas: Principal Issues and Future Actions. UN/FAO, Fishery Resources and Environmental Division. informal paper.

Christie, D.R. 1994. Coastal and Ocean Management Law in a Nutshell. West Publishing Co. St. Paul,

Minn.

Chua T. E. 1993. Essential Elements of Integrated Coastal Zone Management. Ocean and Coastal Managment. 21 (1), pp. 81-109.

Key ingredients and application of integrated coastal zone management (ICZM) are discussed, based on experiences drawn from the Association of Southeast Asian Nations ICZM program. The coastal management system is based on the essential components of integration and coordination throughout the program, which can be structured to maintain the functional integrity of coastal resource systems, reduce resource-use conflicts, maintain environmental quality, and foster multisectoral development. Integrated planning, implementation, monitoring, and evaluation issues are discussed, noting the importance of interagency cooperation and public support.

Cicin-Sain, B. 1992. Ocean Governance: A New Vision. Delware University Sea Grant College Program Report.

Contents: Research Agenda on Ocean Governance; Implications of the Earth Summit for Ocean and Coastal Governance; Since the Stratton Commission Report: Policy Studies in Ocean Governance: 1969 and 1992; Substantive Principles for a Constitution for the U.S. Oceans; Lessons for Ocean Governance from History, Ecology, and Economics; Indigenous Conceptions of Stewardship; Learning from Other Nations; The Changing International Regime: Implications for U.S. Ocean Management, Organization, and Approaches; Caveats on 'Integration' in Ocean and Coastal Management; Ocean and Coastal Management in the United States: The Need to Incorporate Local, State, and Regional Perspectives; On the Practical Challenges of Improving Ocean Governance: Some illustrations from Louisiana; Assessing Cumulative Impacts; Free Trade and Ocean Governance.

Cicin-Sain, B. 1993. Introduction to the Special Issue on Integrated Coastal Management: Concepts, Issues and Methods. Ocean and Coastal Managment. 21 (1-3). pp. 1-9.

This special issue of Ocean and Coastal Management presents a variety of perspectives on the meaning, forms, methods, and experiences in integrated coastal management through 16 papers authored by experts from both the developed and developing worlds. In a 'Recent Developments Section' following the special issue papers, brief accounts of post-UNCED activities related to integrated coastal management being undertaken by a number of international organizations and non-governmental groups are also presented. The purpose of this special issue is to expose various definitions and points of view on integrated coastal management, but not necessarily to resolve or reconcile divergent perspectives.

Cicin-Sain, B. 1993. Sustainable development and integrated coastal management. Ocean and Coastal Managment. 21 (1), pp. 11-43.

Agenda 21, the 40-chapter action plan, agreed to by all nations participating in the 1992 Earth Summit represents an ambitious effort to provide policy guidance across the entire spectrum of environment, development, and social issues confronting mankind. In the area of oceans and coasts (Chapter 17 of Agenda 21), the Earth Summit underscored that the management of oceans and coasts should be 'integrated in content and anticipatory in ambit.' To assist those responsible for implementing the Earth Summit guidelines on ocean and coastal management, this article first reviews the fundamental shift in paradigm reflected in the Earth Summit agreements as well as the specific recommendations contained in Chapter 17. Next, the article examines the central concept of 'integrated management,' noting both its importance and its limits. A general or 'synthesis' model of 'integrated coastal management' is then presented, addressing such questions as management goals, what is being

managed, where, how, and by whom. In a concluding section, methods are proposed whereby the general or 'synthesis model' can be tailored to diverse national contexts, involving varying physical, socio-economic, and political conditions.

Cicin-Sain, B. 1992. Introduction: Values and Ocean Governance. Ocean and Coastal Mangement. 17 (3-4), pp. 193-200.

The papers contained in this special issue on Values and Ocean Governance were initially presented at a conference on "Values and the American Ocean: Philosophical, Historical, Legal, and Public Policy Perspectives", held in Santa Barbara, California in June 1989. The major purpose of the conference was to explore the actual (and potential) role of government as the steward of ocean resources and of ocean space in the "American Ocean": the Exclusive Economic Zone and Territorial Sea (the concept of "American Ocean" was used to connote the public and national (rather than international) character of the ocean areas now under USA jurisdiction) using perspectives from philosophy, history, anthropology, law and public policy. While this conference focused on the USA and the ocean under its control, the underlying questions it posed regarding the relationship between government and citizens vis-a-vis ocean areas under national control, represent fundamental challenges which affect all coastal nations around the world as they seek to bring order and rational management to ocean waters now under national jurisdiction.

Cicin-Sain, B. and Knecht, R.W. 1993. Implications of the Earth Summit for ocean and coastal governance. Ocean Development and International Law. 24 (4). pp. 323-353.

The Earth Summit (United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in June 1992, was unique in the history of international conferences. Never before had so many heads of state participated in such an international negotiation. UNCED was also unique in both the breadth of environmental and development issues addressed and in the nature of the cross-cutting dimensions that were examined (for example, from poverty, population growth, and the role of indigenous peoples to unsustainable patterns of consumption (in the North), the role of women, and technology transfer). The chapter devoted to oceans and coasts was the longest and, in some ways, the most comprehensive, of the 40 chapters making up the action plan (Agenda 21) that was approved at Rio. This article provides an overview of the events leading up to the Earth Summit, describes the principal outputs of the conference and their potential effects on ocean and coastal governance, discusses the main tensions seen at UNCED and some of the negotiating processes, and, finally, considers current efforts at implementation of its recommendations. This article provides an overview of the events leading up to the Earth Summit, describes the principal outputs of the conference and their potential effects on ocean and coastal governance, discusses the main tensions seen at UNCED and some of the negotiating processes, and, finally, considers current efforts at implementation of its recommendations.

Clark, J.R. 1988. Program Development for Management of Coastal Resources. Coastal Management Publications No.4. Rosenstiel School of Marine and Atmospheric Sciences, University of Miami. Prepared for. National Park Service U.S. Department of the Interior and U.S. Agency for International Development. University of Miami, Miami.

Clark, J.R. 1992. Integrated Management of Coastal Zones. FAO Fish and Technical Paper No. 327. Rome.

This report identifies governmental actions that can lead to effective management of coastal resources and strengthening the national capacity for effective coastal resources management through Integrated Coastal Zone Management (ICZM). This a system for controlling development and other

human activities that affect the condition of economic resources and the quality of environment in coastal zones. The overall objective of ICZM is to provide for sustainable use of coastal natural resources and for maintenance of biodiversity. Environmentally planned development is reputed to add to economic and social prosperity of a coastal community in the long term. The orientation of the report is toward developing countries, particularly those of the coastal tropics. Fisheries productivity, increased tourism revenues, sustained mangrove forestry, and security from natural hazard devastation are among the practical benefits of ICZM. ICZM incorporates modern principles of planning and resources management, intensive information bases an interdisciplinary processes. A major objective is to facilitate the interactions of different coastal economic sectors (e.g., shipping, agriculture, fisheries) toward optimal socio-economic outcomes, including resolution of conflicts between sectors. ICZM may be initiated in response to a planning mandate but more often because of a crisis - a use conflict, a severe decline in a resource, or a devastating experience with natural hazards.

Clark, J.R. 1996. Coastal Zone Mangement Handbook. Lewis Publishers, New York.

Clark, J.R. (In press). Coastal Area Management and Planning: Strategic Planning and Program Development. Renewable Resources Information Series, Coastal Management Publication No. 4. USDI/NPS and USAID.

COMAR. 1992. Coastal Systems Studies and Sustainable Development. Proceedings of the COMAR Interregional Scientific Conference, Paris, 21-25 May 1991. Unesco

Cote, R.P. 1992. Marine environmental management: Status and prospects. Marine Pollution Bulletin. 25 (1), pp. 18-22.

A comprehensive global marine environmental management framework does not yet exist. Comprehensiveness involves consideration of all relevant stresses on the quality of the marine environment, a recognition of the interlocking nature of the geographic or spatial dimensions, and the application of managerial elements from goal-setting to monitoring and enforcement. An analytical matrix is described in this paper to assess the comprehensiveness of local as well as global marine environmental frameworks. Progress is being made in all dimensions. At the global level, the United Nations Convention on the Law of the Sea makes reference to the stresses, most of the elements and spatial dimensions. Regionally, many conventions and protocols are in place and some of these are quite comprehensive. At the national level, new legislation and regulations are being continually enacted. While progress is being made, implementation remains weak due to a lack of financial and human resources in these dimensions.

Couper, A.D. 19??. Sea use planning and management simulations. Ocean and Shoreline Management. 15 (4), pp. 283-288.

This paper describes the simulation exercises in Sea Use Planning and Management carried out at the World Maritime University, Malmoe, Sweden. Exercise one deals with the development of a new port. Participants represent various concerned ministries, they make planning decisions and inputs on a sectorial basis regarding location, technical characteristics, environmental and social impacts. They are reconvened as interdisciplinary Task Forces and produce a final integrated plan. Exercise two involves the planning and management of multiple activities in an Exclusive Economic Zone (EEZ)--including the problems of shared fish stocks, cross boundary hydrocarbons, and a disputed zone with an opposite state. ocioeconomic analysis, which accomodates the evaluation of alternative scenarios, can be used in managing common property natural resources, such as coastal zones. Because market forces cannot account for externalities, management interventions are required for sustainable use of common resources. A case study from Bacuit Bay, Philippines, illustrates this need for management planning.

Cox, T.M. 1992. Coastal Zone Planning. Coastal Zone Planning and Management. (ed. Barrett, M.G.).Thomas Telford. pp. 181-193

Crance, C.G. 1994. Cooperation and stewardship: Government coordination agencies in the coastal zone. In. Coastal Zone Canada '94, Cooperation in the Coastal Zone, Halifax, NS, Canada, 1994. (eds. Wells, P.G. Ricketts, P.J.). pp. 625-636.

A growing approach to alleviate environment and development conflict is to integrate behavioral solutions with enforceable, structural policies. The value of behavioral solutions is becoming recognized by government as their role changes from program provider to program facilitator. As a result, participation by non-government groups and local interests in resource use decision making is increasing. This paper examines the role of government coordinating agencies for planning and managing coastal areas. A case study analysis of two agencies, the Islands Trust in British Columbia and the Waterfront Regeneration Trust in Ontario, is employed. Selected agency programs and policies are used as indicators for evaluating the agencies contribution to the resource management process

Crawford, B. and N. West. 1991. Strategies for building human capacity in coastal management. INTERCOAST Newsletter.

Crawford, B.R. Cobb, J.S. and Friedman, A. 1993. Building capacity for integrated coastal management in developing countries. Ocean and Coastal Management. 21(2). pp. 311-337.

The need for building human and institutional capacity has been identified in Agenda 21 of the UNCED conference as well as by a number of international environmental institutions as essential for integrated coastal management (ICM) and sustainable development in developing coastal states. There is a growing need for coastal management practitioners and organizations with expertise in planning and implementation for ICM. The application of strategies for institutional development and building human capacity in coastal management and other fields show that short-term intensive training efforts and long-term institutional strengthening programs are appropriate to address the issues and needs of ICM. An overview of the experience of the URI USAID International Coastal Resources Management Program in Sri Lanka, Thailand and Ecuador presents lessons learned for strengthening ICM efforts in developing countries.

Dixon, J.A. 1991. Coastal Resources: Assessing Alternatives. In. ASEAN/US Policy Workshop on Coastal Area Management in Southeast Asia Conference (eds. Chua, T-E and Pauly, D.) Johore Bahru, Malaysia, Oct 25-27, 1988. ICLARM Conference Proceedings No. 30. pp. 153 (10).

Davis, B.W. and Haward, M. 1994. Ocean Policy and Overlapping Regimes. Coastal Zone Canada '94 Cooperation in the Coastal Zone, Halifax, NS, Canada, 1994. (eds. Wells, P.G. Ricketts, P.J.). pp. 155-164.

The various attempts to delineate ocean boundaries, manage marine resources and protect ocean environments have generated a number of international conventions - so many in fact that they are beginning to interfere with one another. An alphabet soup of international conventions (UNCLOS, CCAMLR, MARPOL, IWC and many others) provide the basis for numerous oceanic regimes. These regimes provide a complex background of conflicting interests and overlapping intentions. Current initiatives relating to the implementation of Agenda 21, the Madrid Protocol and the development of a regime on high seas fishing are complicated by the existence of existing oceanic regimes. The overlap between regimes may complicate the implementation of the post-UNCED agenda and raise important issues related to the nexus between international regimes and national policy making. In federal nations, such as Canada and Australia, the situation is further exacerbated by national-provincial jurisdictional issues and the overlays of authority and interest which plague coastal management. How

is the nexus international-regional-domestic to be handled and more specifically, what kind of institutional arrangements and decision processes of a participatory nature can be devised to handle this increasingly complex situation? Is good science followed by bad decision and how are the inevitable conflicts to be resolved? This paper will explore some options, with specific emphasis on coastal management in federal nations.

Environment Canada and New Brunswick Department of Fisheries and Oceans. 1993. Summary Report from the Canada-U.S. Regional workshop on Coastal Zone Management Experiences and Approaches. Fredericton, New Brunswick. November 17-18, 1993.

Edwards, S.F. 1987. An Introduction to Coastal Zone Economics: Concepts, Methods, and Case Studies. Taylor and Francis, New York.

This book is intended to promote the optimal use of coastal resources through an improved understanding of economics. The underlying premise is that economic analysis, broadly construed, is a powerful tool for illuminating tradeoffs among conflicting allocations of scarce coastal resources. The book is written for non-economists and for students enrolled in marine resource management courses. The reader should expect to learn enough about economics to evaluate critically such arguments.

Evans, N , King, L.R. and Broussard, A. (comps.). 1987. The coastal zone management experience as a model for collaborative resource management. National Conference on the States and an Extended Territorial Sea. San Antonio, TX, 9-11 Dec. 1985. Reports of Texas A&M University Sea Grant Program, pp. 101-105.

Coastal zone management is a comprehensive, multiple-use, collaborative planning system for the management, beneficial use, protection and development of coastal zone resources. The development of the coastal zone management system in the 19~0s is reviewed in this historical perspective.

GESAMP. 1991. Global Strategies f : Marine Environmental Protection Reports and Studies . No. 45. IMO, London.

Goldberg, E.D. 1994. Coastal zone space: prelude to conflict?. Unesco Publishing, Paris.

Goldberg, E D. 1995. Emerging problems in the coastal zone in the 21st century. Maine Pollution Bulletin. 31 (4-12), pp. 152-158.

Gordon E L. 1991 The Future of Non-point Source Pollution Management. Coastal Zone 91'. Proceedings of the Seventh Symposium on Ocean and Coastal Management Long Beach California, USA July 8-12, 1991. American Society of Civil Engineers, New York. pp. 670-675.

Grifman, P.M. and Fawcett, J.A. 1993. International perspectives on coastal ocean space utilization. Proceedings from the Second International Symposium on Coastal Ocean Space Utilization. Long Beach, CA, 2-4 Apr. 1991. Sea Grant Program Report USCSG-TR-01-93.

The development of techniques for the wise use of ocean resources is discussed, including policy, technology, and development. National efforts to protect the coast; reclamation and development of artificial islands; extraction of sea-bed minerals; increased fishery resources; utilization of the energy potential of ocean waves, thermal gradients, and winds; and shipping safety are discussed.

Hayton, R.D. 1990. The Freshwater-Maritime Interface: Legal and Institutional Aspects. Legislative study No. 46. FAO, Rome.

Hershman, M.J. 1985. The coastal decision-making framework as a model for ocean management. Proceedings National Conference on the States and an Extended Territorial Sea. pp. 92-100.

An issue that will arise with increasing frequency is the long-term commitment of ocean space to a particular use: oil and gas production, mineral extraction, sanctuaries, research stations, mariculture, recreation, waste disposal, etc. Each use requires that a site be selected and alternative uses be limited. Deciding on a site requires a balance of development opportunities and preservation values, and fairness in the decision-making process. The coastal decision model can be a useful tool. This paper characterizes the structure and norms of the coastal decision framework and uses these characterizations as criteria for determining the adequacy of the current ocean management regime.

Hildebrand, L.P. and Norrena, E.J. 1992. Approaches and progress toward effective integrated coastal zone management. Marine Pollution Bulletin. 25 (1), pp. 94-97.

The practice of Integrated Coastal Zone Management (ICZM) is growing in prominence worldwide as coastal nations realize that purely sectoral approaches to the management of land and marine resources are clearly inadequate. Growing environmental degradation and resource use conflicts in the coastal zone, the pursuit of unsustainable coastal development and narrowly focused conservation and protection strategies dictate the need for a more integrated and well coordinated approach. While some success has been realized in the application of the principles of ICZM in various coastal nations, the continued development of national and sub-national coastal management strategies, in concert with their further application in specific coastal regions, is required for the 1990s and beyond.

Industrial Economics, Inc., Cambridge, MA. 1992. Protecting Coastal and Wetlands Resources: A Guide for Local Governments. Environmental Protection Agency. Washington, DC. Office of the Assistant Administrator for Water Report EPA/842/R-92/002.

The reports includes discussions of growth management, local plans, regulatory measures, acquisition of property, economic tools, and protection techniques.

InterCoast Network. 1992. Integrated Coastal Area Management Programs, Pilot Programs and Feasibility Studies. 16: 8-12. Coastal Resources Center, University of Rhode Island, Kingston, R.I.

Intergovernmental Oceanographic Commission (IOC). 1994. International Workshop on Integrated Coastal Zone Managemnet (ICZM). Karachi, Pakistan 10-14 October 1994. Workshop Report No. 114. Organized in Co-operation with the National Institute of Oceanography, Ministry of Science and Technology, Government of Pakistan, UNESCO.

Intergovernmental Oceanographic Commission (IOC). 1993. IOC Seminar on Integrated Coastal Management. New Orleans, Louisiana, USA, 17-18 July 1993. Workshop Report No. 90. IOC, Paris.

The purpose of the Seminar was to give participants from developing countries an orientation to integrated coastal zone management. It was sponsored by the Intergovernmental Oceanographic Commission of UNESCO and conducted by NOAA and the University of Rhode Island's Coastal Resources Center, the USAID Coastal Resources Management Programme and the International Coastal and Ocean Organization of the University of Massachusetts.

Intergovernmental Oceanographic Commission (IOC). 1994. Workshop on Integrated Coastal Management. Dartmouth, Canada 19-20 September 1994. Workshop Report No. 104. IOC, Paris.

Intergovernmental Oceanographic Commission (IOC). 1992. Workshop on Coastal Oceanography in

Relation to Integrated Coastal Zone Management. Kona Hawaii, 1-5 June 1992. Workshop Report No. 85. IOC. Paris.

Intergovernmental Oceanographic Commission (IOC) and United Nations Environment Program (UNEP) 1991. Strategies for the Protection and Development of the Oceans and Coastal Areas. Unpublished.

International Geosphere Biosphere Programme. 1995. Land-Ocean Interactions in the Coastal Zone Implementation Plan. (eds. Pernetta, J.C. and Milliman, J.D) Global Change Report No. 33. Stockholm.

Intergovernmental Panel on Climate Change (IPCC). 1994. Preparing To Meet the Coastal Challenges of the 21st Century. Conference Report of the World Coast Conference 1993, Noordwijk, The Netherlands, 1-5 November, 1993.

Intergovernmnetal Panel on Climate Change (IPCC). 1990. Report of the Coastal Zone Mangement Subgroup. Strategies for Adaptation to Sea Level Rise. Intergovernmnetal Panel on Climate Change, Response Strategies Working group. Ministry of Transport and Public Works, The Hague.

Jacobson, M.A. 1995. The United Nations Regional Seas Programme: How does it measure up?. Coastal Management. 23 (1), pp. 19-39.

This article describes the United Nations' Regional Seas Programme in terms of its basic structure, goals, and current status; discusses alternative approaches to determine program effectiveness; and presents a process-related evaluation of the program. The paper analyzes and critiques the effectiveness of the Regional Seas Programme based on the five program goals described in each regional action plan: environmental assessment, environmental management, environmental legislation, and institutional and financial arrangements. The analysis shows that the Regional Seas Programme has a record of substantial programmatic achievements to address regional marine pollution issues. However, the process evaluation does point out some weaknesses in the overall program including difficulty in characterizing environmental problems, the narrow focus of environmental management programs and protocols, and inadequate funding by participating states. Finally, at this point in the program there is a critical need for detailed outcome evaluations to determine environmental improvement.

James, D., Koudstaal, R. and Rijsberman, F.R. 1989. Integrated Management of Coastal Resources: A Framework for Analysis. Paper presented to the conference on Coastal Zone Management, Griffith University.

Kelleher, G. and R. Kenchington, 1992. Guidelines for Establishing Marine Protected Areas. A Marine Conservation and Development. IUCN Report. Gland, Switzerland.

Knecht, R.W. 1994. A commentary on the institutional and political aspects of regional ocean governance. Ocean And Coastal Management. 24 (1), pp. 39-50.

As the world moves toward more coherent and comprehensive ocean governance, many questions will be encountered, not the least of which pertains to the appropriate geographic scale for such efforts. Indeed, the options range from the use of the global or worldwide scale to a bottom-up approach which would emphasize the local or community scale with regional and national scales intermediate between the two extremes. The purpose of this paper is to discuss the possibility that the regional (multinational) scale, may, in fact, be the most appropriate geographic scale for many ocean governance regimes and to lay out some of the institutional and political considerations that often complicate such efforts.

Kenchington, R.; Crawford, D. 1993. On the meaning of integration in coastal zone management. Ocean and Coastal Management. 21 (1-3), pp. 109-127.

This paper discusses the definition and use of the term 'integrated management' in the context of coastal and ocean resources. It identifies several components which appear to be needed to establish an integrated management system for a large area subject to multiple use and jurisdiction. It suggests that the basis of integrated management should be a clear articulation of common purpose which addresses long term needs and vision. Once developed, this common purpose should be securely established to provide the setting against which sectoral and agencies managers and the community conduct and co-ordinate their activities.

Koudstaal, R and Bower, B.T. 1988. IFIAS Program on Coastal Resources Management. IFIAS Position paper. Maastricht.

Lamson, C (Ed.). 1994. The Sea Has Many Voices. Oceans Policy for a Complex World. McGill-Queen's University Press, Montreal.

Levy, J. P. 1993. A national ocean policy? Marine Policy. 17(2), pp. 75-80.

The article highlights the need for distinguishing between coastal management and sea use planning on the one hand and a State's "national ocean policy" on the other. The latter, it is posited, reflecting as it does a national approach to the oceans at the highest level of government and global in scope, is subject in greater degree to international limitations and is less amenable to "integration". The greatest degree of integration is found at the level of coastal management, a lesser degree in ocean management sea use planning and the least in ocean policy making.

Lowry, K. 1988. Issues in designing a coastal management program. ASEAN/US Policy Workshop on Coastal Area Management in Southeast Asia Conference (eds. Chua, T.E and Pauly, D.) Johore Bahru, Malaysia, Oct 25-27, 1988. ICLARM Conference Proceedings No. 19. pp. 191-204.

ASEAN coastal planners and managers have to address several key questions in the process of program design: (1) What coastal problem will be addressed? (2) What management mechanisms will be used? (3) Where will management be exercised? and (4) How will coastal management activities be integrated into the existing management activities of sectoral agencies? Experience has shown that, although there is a great deal of awareness of coastal problems, it is difficult to translate that awareness into programs that can be successfully implemented. This paper examines several issues in designing a coastal management program.

Margavio, A.V. 1993. Myths, Models, and Managers: The Impact of Reifying the Traditional Marine Resource User Model. Coastal Zone 93'. Proceedings of the Eighth Symposium on Coastal and Ocean Manageement, New Orleans, Louisiana, July 19-23, 1993. American Society of Civil Engineers. New York, pp. 1449-1455.

McConnell, M.L. and E. Gold. 1991. The Modern Law of the Sea. Framework for the Protection and Preservation of the Marine Environment. Journal of International Law. 23(1), pp. 83-105.

Miles, E.L. 1992. Future Challenges in Ocean Management: Towards Integrated National Policy. Ocean Management in Global Change. (ed. P. Fabbri.) Elsevier Applied Science. London. pp. 595-620.

Miles, E.L. 1989. Concepts, approaches, and applications in sea use planning and management. Ocean Development and International Law. 20 (3), pp. 213-238.

This article discusses some essential concepts and approaches for sea use planning and management that are taken from the general literature on planning, management, and policy implementation. It is divided into two parts. The first part consists of an eclectic and wide-ranging survey of the literature on planning, management, and policy analysis in general use. The second part contains applications to the analysis of problems of multiple-use conflicts since this is a difficult and growing problem that sea use planners face.

Nyhart, J.D. (ed.). 1985. Coastal Zone and Continental Shelf Conflict Resolution: Improving Ocean Use and Resource Dispute Management. Proceedings of a Conference, Cambridge, MA, 13-15 Nov. 1984. Massachusetts Institute of Technology Sea Grant College Program Report MITSG 85-28, 167 pp.

The 19 papers in this report apply the mechanisms of dispute resolution to decision making in ocean affairs. The papers have been written by experienced mediators, third party facilitators, stake-holders, governmental policy makers, and academics. Conflicts over ocean uses, the opportunities for improving their management, the mechanisms available, and some of the problems to be overcome in arriving at broader usage of those processes are discussed. Specific cases in coastal zones and in continental shelf projects are analyzed, with emphasis on why negotiations succeeded or not, and what lessons might be drawn. In most of the analyses, mediators are paired as co-authors with one or more stake-holders in order to gain wider perspective.

Organization for Economic Cooperation and Development (OECD). 1993. Coastal Zone Management: Integrated Policies, OECD, Paris.

Olsen, S.B. 1993. Will integrated coastal management programs be sustainable; the constituency problem. Ocean and Coastal Management. 21(1-3), pp. 201-225.

The greatest need for coastal resource management initiatives is in tropical countries, since it is here that the process of environmental change is most rapid and it is here that the great majority of the increase in human population that is expected by 2040 will be concentrated. Fortunately, a body of experience can be drawn upon in a number of low income tropical nations that have already been working to meet the challenge and implement coastal management programs. National coastal management legislation was enacted in Sri Lanka in 1981 and in Costa Rica in 1977. The US Agency for International Development (USAID) had the foresight to fund two pilot projects in coastal management in 1985. The first of these was administered through a cooperative agreement between the USAID Office of Science and Technology and the Coastal Resources Center at the University of Rhode Island. This program has been extended to a ten-year effort and has focused upon (a) initiating national coastal management programs in three pilot countries, Ecuador, Sri Lanka, and Thailand; (b) initiating a training program in the practice of coastal management; and (c) sponsoring a series of networking activities to promote the sharing of experience.

Peet, G. 1988. Integrated Management of Sea Areas: A Condition or the Protection of the Marine Environment. Proceedings of the Annual Seminar of the Environmental Management and Research. Association of Malaysia, 31 March-4 April 1988.

Pernettta, J.C. and Elder, D.L. 1992. Climate, Sea Level Rise, and the Coastal Zone: Management and Planning for Global Changes. Ocean and Coastal Management. 18, 113-160.

Pernettta, J.C. and Elder, D.L. 1993. Cross-sectoral, Integrated Coastal Area Planning (CICAP): Guidelines and Principles for Coastal Area Development. IUCN and WWF. Gland, Switzerland.

Potier, M. 1994. Cost Effectiveness in Coastal Zone Management: The OECD Experience. Marine Policy. 18(2), pp. 121-126.

During the 1980s, environmental problems in coastal areas of OECD countries reached such a critical level that OECD governments decided to undertake a major review of the effectiveness of their coastal management policies. The OECD was asked to carry out a broad review of their policies and to suggest ways to improve them. The OECD report on coastal zone management has been prepared in response to this request. The report found that in most OECD countries, coastal zones face an array of land use pressures that have resulted in serious and pervasive environmental degradation. Water pollution, erosion, flooding, and damage to and loss of natural areas and wildlife are among the primary environmental problems. Pollution of coastal waters caused by the discharge of raw or partially treated sewage is identified as a particular problem in Italy, Spain, Portugal, Germany and Sweden. In the USA water eutrophication is identified as a serious problem in many areas, taking a severe toll on fish life, especially in the Gulf of Mexico. In other OECD countries (Australia, Canada, Norway, New Zealand and Finland), the diminution of fish stocks caused by commercial fishing activities is identified as a serious coastal zone environmental concern. Land use pressure resulting in coastal zone degradation from tourist and industrial development is especially troublesome in Spain, Portugal and Yugoslavia, while loss of wetlands and natural habitats is identified as a serious concern in Greece, Australia, New Zealand and Turkey. The OECD report examined the causes of these problems and on the basis of this analysis put forward recommendations to overcome them. This paper focuses on the "cost effectiveness" aspects of the OECD report and uses the concept of the integration of economic and environmental policy making in coastal zone management to demonstrate how sustainable development can be achieved in coastal areas in a cost-effective way.

Pickering, H. 1994. Practical Coastal Zone Management. Marine Policy. 18 (5), pp. 393-107

Technical management alternatives in coastal zone management are explored for such goals as resource allocation, environmental impact mitigation, and conflict resolution. The principles of strategic management are reviewed, and experiences from the U.K. and other places around the world are drawn upon to develop a decision-making framework and practical tools that will give an integrated, coordinated array of management measures for a coastal area. Factors to contend with that influence management effectiveness are discussed, including natural trends, human-induced trends, existing management obligations, and resource elements. Management performance evaluation should be ongoing, with specific consideration for training and education programs

Pravdic, V. 1992. Strategic approaches in coastal zone management in semi-enclosed seas. Requirements and realities: Environmental protection and economic development. International Journal of Environmental Studies. 42 (2-3), pp. 115-122.

The UNCED 1992 Conference marked the end of a period, and present a turning point in environmental protection. Major international Conventions and Protocols (MARPOL, UDC, LOS, Barcelona--to mention only those of major importance for the Mediterranean) have provided an institutional framework for the protection of the sea and its coastal regions. Their impact and achievements are positive and demonstrable, yet in practice they have fallen short of major requirements of marine environmental protection based on scientific evidence, of what has been possible in technical or technological sense, and of what has been expected by the public at large. The negative trend in marine environmental quality has generally not been reversed. The presentation will try to answer the question: Why? A major flaw is considered to be the lack of strategies integrating environmental requirements and economic conditions.

Ricketts, P.J. and M. H. Lemay. 1991. Coastal Development andManagement: A Strategic Assessment and Policy Analysis. Unpublished report produced for the International Centre for Ocean Development. ICOD, Halifax, N.S.

Rijsberman, F.R and Koudstaal, R. 1989. Development and Application of a Framework for Analysis for Coastal Zone Management in Different National and International Contexts. In. Coastal Zone 89' Proceedings of the Sixth Symposium on Coastal and Ocean Management. Charleston, SC, USA. July 11-14, 1989. pp. 58-72.

Rychlak, R.J. 1991. Coastal Zone Management and the Search for Integration. De Paul Law Review. 40 (4), pp. 981.

Smith, H.D. 1995. The Role of the State in the Technical and General Management of the Oceans. Ocean and Coastal Management. 27(1-2). pp. 5-14.

Snedaker, S.C. and C.D. Getter, 1985. Coastal Resources Management Guidelines. Renewable Resources Information Series, Coastal Management Publication No. 2. Prepared by Research Planning Institute, Inc., Columbia, SC for U.S. National Park Service and U.S. Agency for International Development.

Soden, D.L. 1989. Conflict Resolution in Coastal Zone Mangement - The Effects of Environmental Values, Technical Information, and Knowledge Holding. In. Coastal Zone 89' Proceedings of the Sixth Symposium on Coastal and Ocean Management. Charleston, SC, USA. July 11-14, 1989. pp. 4010-4021.

Sorensen, T. 1992. Coastal resource management. New Zealand Engineering. 47 (2), pp. 31-32.

The pressures of habitation and economy on the diverse natural environment found along the coast, coupled with the overriding importance of the coastal zone to man's economic future, is now so great that coordinated action on a regional, if not international scale, is of paramount importance. This is particularly relevant in the developing world where the pace of development has often outstripped indigenous management capabilities. This paper summarises what has gone before and indicates the approach that should be taken in the future, particularly relating to the wider acceptance of numerical modelling techniques, and in highlighting potential problems.

Sorensen, J.C. and McCreary, S.T. 1990. Institutional Arrangements for Managing Coastal Resources and Environments. Agency for International Development, Washington, DC (USA) Renewable Resources Information Service Coastal Management Publications. No. 1.

The authors have reviewed the literature on institutional arrangements for coastal zone management in 75 countries, with concentrated attention on 25 of them. In so doing, they have produced the most detailed analysis of the subject yet prepared. This book is one in a series of publications produced for the U.S. Agency for International Development (USAID) by the National Park Service (NPS) to guide the planning and management for sustainable coastal development and for the conservation of coastal resources. The series also includes a case book with eight case studies, a coastal protection guidebook and a program development guidebook. This book presents strategies to strengthen the governance of coasts and the management of renewable natural resources in coastal zones of developing nations. It represents a synthesis of literature from the developed and developing world along with the findings of our interviews with coastal resource managers. Chapter 2 presents a series of technical terms and phrases. Chapter 3 explains key differences and commonalities among coastal nations. The evolution of coastal management programs is explained in Chapter 4. Chapter 5 reviews coastal issues, and Chapter 6 identifies key actors in coastal resource management. Chapter 7 presents eleven management strategies. Chapter 8 presents an array of alternate institutional arrangements and supplements. Program evaluation is discussed in Chapter 9 as the last step in the development of an integrated and comprehensive coastal resources management program. Chapter 10 offers two sets of recommendations, are to guide the work of international assistance organizations,

while the second set gives suggestions for the creation of national coastal resources management programs. A key finding of this report is that there is an array of management strategies and an array of institutional managements available to help allocate coastal resources among competing and conflicting interests. A second finding is that institutional arrangements and management strategies must be tailored to the needs of each individual coastal, (geographic scope of issues, existing institutions, political traditions, and technical capabilities). A third key finding of this report is that nations with one or more of four critical coastal-dependent sectors have a strong incentive to pursue integrated coastal management: fisheries, tourism, mangrove forestry, or an economy vulnerable to coastal hazards.

Sorenson, J. 1993. The Management of Enclosed Coastal Water Bodies: The Need for a Framework for International Exchange. The Manageemnt of Coastal Lagoons and Enclosed Bays. (eds. Sorenson et al.) American Society of Civil Engineers, New York. pp. 1-17.

Stuart, K.A. 1993. Partnerships Strenghthen Watershed Management. Coastal Zone 93'. Proceedings of the Eighth Symposium on Coastal and Ocean Manageement, New Orleans, Louisiana, July 19-23, 1993. American Society of Civil Engineers, New York, pp. 3226-3234

Thailand Coastal Resources Management Project. 1989. Marine and Coastal protected Area Zoning: A Compendium of Background Papers on Zoning in Marine Protected Areas and other Coastal Waters. Office of National Environment Board, The University of Rhode Island

Towfighi, P.S. 1994. Integrated Planning and Management of Coastal Areas. Marine Policy, 18 (2), pp. 107-112.

The importance of coastal planning and management has long been recognized, but with the increasing population in these areas worldwide, serious pollution of coastal waters could result from uncontrolled development, especially in the vicinity of urban areas. Pollution from land uses in coastal environments arises from residential development, especially in terms of wastewater management and treatment, and from industrial and tourist activities. As the emphasis for controlling overdevelopment in coastal regions has focused primarily on scientific research and analysis, a shift should now be made to include integrated development programs. A conceptual framework for integrated planning and management of coastal areas is presented that considers six primary issues: environmental assessment; development objectives and programs; analysis of sectoral activities; the development of strategies and policies to deal with development in sensitive coastal areas; institutional capacity building at the global, regional, national, and local levels; and implementation of the integrated planning and management scheme. (1 diagrams)

Korea Ocean Research and Development Institute and Simon Fraser University. 1995 The First Korea-Canada Symposium on Marine Environment, Harbour and Coastal Management. May 30-31, 1995, Soeul Korea. Summary Highlights.

United Nations Conference on Environment and Development (UNCED). 1991. Mechanisms for Capacity Building. Research paper No. 9. UNEP

United Nations Conference on Environment and Development (UNCED). 1991. International Institutionas and Legal Instruments. United Nations Conference on Environment and Development. Research Paper No 10. UNEP.

United Nations Development Programme (UNDP) and Division for Ocean Affairs and the Law of the Sea (DOALOS), 1994. Action Plan for Human Resources Development and Capacity Building for the Planning and Management of Coastal and Marine Areas, 1993-1997. First Edition, March 1994.

United Nations Environment Programme (UNEP), 1993c. Report on Interregional Meeting of Experts to Discuss Guidelines for Integrated Coastal and Marine Areas Management, Rome, 29 November-1 December, 1993. UNEP, Mediterranean Action Plan, Priority Actions Programme, Regional Activity Centre, Rome.

Vallega, A. 1991. The Development of integrated sea-use management. New York: Routledge.

Vallega, A. 1992. Sea Management - A Theoretical Approach, Elsevier Applied Science, New York,.

Vallega, A. 1993. A conceptual approach to integrated coastal management. Ocean and Coastal Management. 21(1-3), pp. 149-162. Journal-Article

This paper focuses on the concept of Integrated Coastal Management (ICM) putting the theoretical basis of Chapter 17, Agenda 21 (UN Conference on Environmental and Development, UNCED), in relation to the theoretical backgrounds on which the development of coastal area programs have been founded. Reasoning leads us to think that the general system theory is the proper conceptual basis to stimulate ICM and that, in this theoretical context, integration is to be pursued between the claiming of national maritime jurisdictional belts and the protection of the coastal ecosystem, the coastal system and its external environment, the decision making systems acting at all levels (international, regional, national and local). Integration, therefore, should be thought of as a political process.

Vallega, A. 1993. The Regional Scale of Integrated Coastal Area Management: The State of Conceptual Frameworks. In. Coastal Zone 93'. Proceedings of the Eighth Symposium on Coastal and Ocean Manageement, New Orleans, Louisiana, July 19-23, 1993. American Society of Civil Engineers, New York, pp. 2628-2637.

Vallega, A. 1994. The regional scale of ocean management and marine region building. Ocean and Coastal Management. 24 (1), pp. 17-37.

The political relevance of ocean management on the regional scale is discussed with reference to (i) the UNEP approach through the Regional Seas Programme (1974), which deals with enclosed and semi-enclosed, as well as open seas; (ii) the UNCLOS (1982) approach, which refers to a concept of enclosed an semi-enclosed seas not coincident with that of geography and which does not distinguish between enclosed and semi-enclosed; (iii) the UNCED (1992) approach, which throughout Agenda 21, Chapter 17, does not regard the regional marine space as worthy of special provisions. In this context two interacting issues should be noted. On the one hand, there is the need to develop coastal and ocean management on the regional scale, which is dealt with by current conventions, as well as others in preparation. On the other hand, there is the need to tailor management programmes and the decision-making systems to marine areas which, consisting of one or more contiguous ecosystems, can be regarded as regional. In this view, contributions, from the geographical theory of the region are considered with the aim of stimulating interaction between this and the theory of coastal and ocean management.

Vallejo, S.M. 1994. New structures for decision-making in integrated ocean policy. Ocean Governance: Sustainable Development of the Seas. (ed. Payoyo, P.B.) United Nations University Press 1994. Tokyo, pp. 71-95

The objectives of this paper are: to review the institutional problems that affect existing administrative structures in their ability to integrate the marine dimension into national development strategies, to examine the evolutionary process of institution building through a review of national experiences and to analyse the effectiveness of current organizational arrangements; and to discuss

alternative institutional arrangements that could effectively enhance and support the process of integrated ocean planning and management, through a discussion of specific measures needed to strengthen the institutional capabilities of nations in the field of ocean affairs.

Vallejo, S.M. 1993. The integration of coastal zone management into national development planning. Ocean and Coastal Management. 21(1-3), pp. 163-182.

The broad acceptance and collective commitment of countries to the tasks involved in the implementation of Agenda 21, Chapter 17, have profound implications vis-a-vis the interplay between coastal zone management (CZM) and national development planning (NDP). it appears that in many countries, CZM has eved in isolation from the mainstream of national development processes. The paper examines various forms and elements for the effective integration of CZM into NDP.

Vellinga, P. and Klein, R.J. 1993. Climate Change, Sea Level Rise and Integrated Coastal Zone Management: An IPCC Approach. Ocean and Coastal Management. 21. pp. 245-268.

Van der Weide, J. 1993. A systems view of integrated coastal management. Ocean and Coastal Management. 21. pp. 129-148.

Natural hazards and human activities in the coastal zone are threatening the integrity of the coastal resource system. Conflicts of interest between short term economic benefits and long term ecologic assets should be identified and solved by means of a balanced CZM approach. Systems analysis, supported by mathematical modelling tools are the appropriate instruments to assist the coastal zone manager. The paper presents a general system description of the coastal zone, and focuses on the modelling of the natural subsystem components of this system as a first step towards a model for Integrated Coastal Management (ICM).

Von Zharen, W.M. 1995. Environmental Governance of the Seas, the Coastal Zone, and Their Resources. Natural Resources & Environment. 9 (4). pp. 3-?

Walker, H. J. 1990. Nature, Humans and the Coastal Zone. The International Journal of Social Education. 5 (2).

Watt. D.C. 1990. An integrated marine policy: A meaningful concept? Marine Policy. 14 (4). pp. 299-304.

This article examines the arguments for and against an integrated marine policy. Marine policy in presidential, cabinet, politburo and mixed systems is examined. Problems of coordination between different government departments, between the public and private sectors and between central and local government are highlighted. The article concludes by stressing that resolution of the issue requires political choice at every level.

Winsemius, P. 1995. Commentary - Integration of Policies. A Requirement for Coastal Zone Management. Ocean and Coastal Management. 26 (2). pp. 151-162.

World Coast Conference. 1993. Preparing to meet the Challenges of the 21st Century, Noordwijk, The Netherlands, 1-5 November 1993. The World Bank.

World Coast Conference 1993. Noordwijk Guidelines for Integrated Coastal Zone Mangement. For Distribution to the World Coast Conference 1993 Noorddwijk, The Netherlands, 1-5 November 1993. The World Bank.

World Coast Conference 1993. Some Considerations on the Economic Importance of Pro-Active Integrated Coastal Zone Management. October 1993. World Coast Conference Organising Committtee. Prepared by the Intsiture for Environmental Studies, The Netherlands.

World Coast Conference 1993. Mangement Arrangements for the Development and Implementation of Coastal Zone Management Programmes. (Eds. Jones, V. and Westmacott, S.) October 1993. The Netherlands, 1-5 November 1993.

??????. 1994. The Institution's Response to the Government's Consultation Papers "Development Below Low Water Mark' and "Managing the Coast". J. Inst. Water Environ. Manage. 8 (3), pp. 340-341.

??????, 199?. Coastal resources and integrated coastal development, Oporto, 7 and 8 October 1993: proceedings of the conference / Luxembourg Office for Official Publications of the European Communities ; Lanham, MD.

?????? 1992. Coastal Zone Planning and Management: Proceedings of the Conference Coastal Management '92 Integrating Coastal Zone Planning and Management in the Next Century. T. Telford, London

SCIENCE ISSUES (Top)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Bewers, J.M. and Vandermeulen, J.H. 1994. Integrated coastal zone management: The implications for science. Coastal Zone Canada '94, Cooperation in the Coastal Zone, Halifax, NS, Canada, 1994. (eds. Wells, P.G. and Ricketts, P.J.). pp. 3-17.

Agenda 21, of the United Nations Conference on the Environment and Development (UNCED, 1992) formalized the concept of Integrated Coastal Zone Management (ICZM). The concept involves the comprehensive management of both marine and adjacent land environments and of anthropogenic activities therein. We argue that, while ICZM might be seen as a new management approach subsuming sectoral interests in the coastal zone, it is foremost a new perspective on the process of exploiting and preserving coastal resources in the context of sustainable development. Meaningful acceptance of ICZM necessitates radical rethinking of the status quo regarding coastal management in two dimensions: socio-economic and scientific. This reflects the inadequacy of current scientific/social/political interactions. In our analysis we take as basic tenets the need to account for externalities and comprehensive coverage of diverse anthropogenic practices as well as a priori acceptance of the legitimacy of waste assimilation.

Boelens, R.G.V. 1992. From Policies to Science - Strategies for Marine Environmental Protection. Marine Pollution Bulletin. 25 (1-4), pp. 14-17.

Concern over the extent of marine pollution in many of the world's coastal environments has stimulated an international debate on how to improve strategies for marine pollution prevention. Much of the debate centers on the concepts of Sustainable Development and Precautionary Action and the reflections of these concepts in new strategies and measures for reducing emissions of substances and wastes. The degree to which scientific considerations should influence regulatory actions in limiting the types and amounts of substances emitted to the environment is also a matter of intensive discussion. However, some scientists now believe that a comprehensive strategy for protection and management of the total environment is a logical prerequisite to significant reductions in marine and other forms of pollution.

Colgan, C.S. 1995. Using indicators of Environment Quality in Policymaking: Promise and Pitfalls. Improving Interactions Between Coastal Science and Policy. Proceedings of the Gulf of Maine Symposium, Kennebunkport, Maine, November 1-3, 1994. Ocean Studies Board, National Research Council, National Academy Press, Wash., D.C. Pages 217-220

Cote, R.P. 1994. Getting MEQ onto Political Agendas. The Sea Has Many Voices. Ocean Policy for a Complex World. (ed. Lamson, C.) McGill University Press, Montreal. pp. 279-287.

Coughanowr, C. and G. Kullenberg, 1993. "On the Need for Scientific Input on an International Scale: The Intergovernmental Oceanographic Commission's Perspective on Integrated Coastal Management." Ocean and Coastal Management, 21(1993):339-352. Elsevier Science Publishers Ltd., England.

Guerrero, R.D. 1989. Information Needs for Coastal Resources Management. ASEAN/US Policy Workshop on Coastal Area Management in Southeast Asia Conference (eds. Chua, T.E and Pauly, D.) Johore Bahru, Malaysia, Oct 25-27, 1988. ICLARM Conference Proceedings No. 30. pp. 181-183

Successful coastal resources management (CRM) needs the following information: (1) field data, i.e., baseline information; (2) information relevant to plan formulation; (3) information relevant to policy formulation and implementation; and (4) information for public education. This paper discusses the interactions of these four types.

Hirsch, A. 1985. Science and Decision Making in the Coastal Zone: Fifteen years of NEPA. Eighth Biennial International Estuarine Research Conference, Durham, NH, 28 Jul. 1985.

The National Environmental Policy Act (NEPA), with its requirement for preparing environmental Impact Statements (EISs) for major federal projects and programs, is now 15 years old. It has been influential in resolving controversial questions involving outer continental shelf oil and gas development, wetlands development, power plant siting, and coastal sewage discharges.

intergovernmental Oceanographic Commission (IOC). 1992. IOC Workshop on Coastal Oceanography in Relation to Integrated Coastal Zone Management, Kona, Hawaii, 1-5 June 1992.

This special workshop session discussed the positive and negative relationships which exist between coastal ocean science and its use in furthering coastal zone management purposes. It was brought out that many nations during the coming decade will begin to develop and implement coastal zone management programmes, particularly due to recommendations from the Intergovernmental Panel on Climate Change, the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change, and the United nations Conference on Environment and Development; and the fact that there is a clear need for integrated decision making which addresses complex coastal problems and issues. Presentations were made which showed the value of coastal oceanography to address issues such as water quality and fishery management, measures to reduce coastal erosion, and the siting of facilities which affect coastal waters. The panel looked into the importance of coral reef ecosystems, how they are affected by anthropogenic inshore influences, and how they serve as a barometer of the health of coastal waters and climate change such as sea level rise. The utility of monitoring their health and conducting retrospective analysis based on information that can be extracted from samples was demonstrated.

Intergovernmental Oceanographic Commission (IOC). 1993. Reports of Meetings of Experts and Equivalent Bodies, 1993. IODE Group of Experts on Marine Information Management. Fourth Session. Washington, DC, USA, 6-9 October 1993. UNESCO, IOC/IODE, Paris.

Klemas, V.V. and Weatherbee, O. 1995. The use of GIS and remote sensing in coastal resource

management. Second Annual Marine and Estuarine Shallow Water Science and Management Conference, Atlantic City, NJ (USA), 3-7 Apr 1995. pp. 40-??

Geographic Information Systems (GIS) and digital data base techniques are providing environmental scientists and resource managers with an effective means for performing landscape scale ecological studies and solving resource protection and development problems. Specifically GIS enables scientists to link theoretically oriented ecological models with applications in resource planning and management. The GIS approach is particularly effective when used with remotely sensed data as input and Global Positioning Systems (GPS) for field verification and accuracy assessment. Remote sensing technology has been used for over a century to acquire data concerning a variety of environmental applications. The integration of image data into a GIS has recently become feasible. There has always existed the need for such data as maps and ground surveys in helping to analyze remotely sensed data. GISs have also had a need for remotely sensed data to correct, update, and maintain their cartographic data bases.

National Research Council (NRC). 1995. Science, Policy and the Coast. National Research Academy Press, Wash., D.C. 85p.

National Research Council (NRC). 1995. Improving Interactions Between Coastal Science and Policy. Proceedings of the Gulf of Maine Symposium. Ocean Studies Board, NRC. National Academy Press, Wash., D.C. 259p.

Ricketts, P.J., McIver, A.R., and Butler, M.J. 1989. Integrated Information Systems - The Key to Coastal Zone Mangement. Coastal Zone 89' Proceedings of the Sixth Symposium on Coastal and Ocean Management. Charleston, SC, USA. July 11-14, 1989. pp. 4138-4150.

Ricketts, P.J. 1992. Current Approaches in Geographic Information Systems for Coastal Management. Marine Pollution Bulletin. 25 (1-4), pp. 82-87.

Geographic Information Systems (GIS) are being widely applied in coastal resource management. Critical coastal management issues such as sensitivity analysis, habitat modelling and pollution monitoring require the ability for resource managers to make rapid and appropriate decisions. With the capability to incorporate a wide variety of alphanumeric and graphic data, including remotely sensed imagery, GIS provide an increasingly sophisticated tool for decision-makers. Furthermore, current technological developments in artificial intelligence and expert systems are opening up new avenues for advanced GIS applications. However, such developments have the effect of making GIS more and more remote as far as resource managers and scientists are concerned, due to the high level of technical expertise required to operate these advanced systems, not to mention the high costs of the required hardware and software. This paper addresses the need to provide simpler and relatively inexpensive GIS for coastal resource management, especially for developing countries.

UNCED. 1991. Some Reflections on Scientific Research on Marine Issues. United Nations Conference on Environment and Development. Research Paper No 11. GESAMP

U.S. National Research Council, 1994. Environmental Science in the Coastal Zone: Issues for Further Research. Proceedings of A Retreat held at the J. Erik Jonsson Woods Hole Center, Woods Hole, Massachusetts, June 25-26, 1992. National Academy Press, Washington, DC.

Wildish, D.J. and Strain, P.M. 1994. Science and Coastal Zone Management. Coastal Zone Canada '94, Cooperation in the Coastal Zone, Halifax, NS, Canada,(eds. Wells, P.G. Ricketts, P.J.). pp.

Our concern here is to present the role that science can play in the resolution of existing, or

future, multiple use resource conflicts of the coastal zone. Methods which are required for rational coastal zone management include scientific tools such as: field monitoring, predictive ecological simulation modelling used to evaluate alternate management options, and research projects which answer specific coastal zone management questions. The science input is best obtained from small multidisciplinary research groups which include a marine ecologist and physical and chemical oceanographer. Examples of each type of method are given, together with a discussion of how scientific input can aid in the coastal zone management of the Fundy Isles area of the Bay of Fundy.

INDIGENOUS ISSUES (Top)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Berneshawi, S. 1994. Involving Mi'kmaq traditions in coastal resource management. In. Coastal Zone Canada '94, Cooperation in the Coastal Zone, Halifax, NS, Canada, 1994. (eds. Wells, P.G. Ricketts, P.J.). pp. 584-593.

Mi'kmaq people have lived and died along the Atlantic coast of Canada and parts of the United States for a long time. As such, the sea was, and still is, a major source of food, transportation, and other essentials for coastal survival. Vital elements found in Mi'kmaq traditional management have gone unrecognized within existing integrated management systems. This is because traditional Western approaches to management systems are top-heavy and hierarchial. As the field of management is continually growing, the level of inclusion and recognition of the importance of the Mi'kmaq Nation in the management process is increasing. The process of involvement and relationship building must rely upon trust, respect and acceptance. This discussion focuses on the mechanisms of involvement and the benefits of a process which incorporates and respects Mi'kmaq traditions and world view.

Smith, M.K. and Pai, M. 1992. The Ahupua'a Concept: Relearning Coastal Resource Management from Ancient Hawaiians. NAGA. 15(2), pp. 11-13

Isolated in the middle of the Pacific Ocean, Hawaii was one of the last areas to be reached by "western" explorers; as a consequence, some ancient traditions were preserved in Hawaii well into the 19th and 20th centuries, providing an opportunity to learn from a surviving indigenous culture. An account is given of the division of the islands into various units and their exploitation. The smallest major divisions were the "ahupua'as," which spread out at the base along the shore and were self-sufficient units. In this way the ancient Hawaiians recognized the relationship between the land and sea, rainfall and vegetation, nutrients and runoff and preserved the integrity of the delicately balanced ecosystem of which they were a part and upon which they relied for their every need. Modern parallels to this ancient system are broken and irregular; the reorganization of the "ahupua'a" system marked the beginning of the decline of Hawaiian ecosystems. Although steps are being taken to remedy the present situation, Hawaii now ranks among the highest in the nation for its levels of pollution, endangered species and disappearing habitats. More and more, the model for improved anagement is being sought in the revival of ancient traditions

Valencia, M.J. and VanderZwaag, D. 1989. Maritime claims and management rights of indigenous peoples: rising tides in the Pacific and Northern Waters. Ocean and Shoreline Management 12 (2) pp 125-167.

The Maoris in New Zealand, the Torres Strait Islanders in Australia, Hawaiians and northwest Indians in the US, the Haida, the Alaska Inuit, the Canadian Inuit, and the native races (Eskimos) of Greenland.

COMMUNITY-BASED/PUBLIC PARTICIPATION (Top)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Cayer, A.A. and Biagi, M. 1994. Community based ocean management strategies. In. Coastal Zone Canada '94. Cooperation in the Coastal Zone, Halifax, NS, Canada, 1994. (eds. Wells, P.G. Ricketts, P.J.). pp. 497-504.

This paper deals with coastal zone management that links environmental, economic and social issues in an winter-woven matrix of applications. Three key areas are identified as worthy of effort in affecting meaningful changes which will respond to this multidisciplinary concern--community based data management, marketing for value not volume and environmental activism.

Donnelly, K. 1994. Community-based Planning for the Coastal Zone. Coastal Zone Canada '94. Cooperation in the Coastal Zone, Halifax, NS, Canada, 1994. (eds. Wells, P.G. Ricketts, P.J.). pp. 508-513.

This paper describes the who, what, when, where, why and how of a community-based planning process, as it can be applied to the coastal zone. An overview based on the Atlantic Coastal Action Program planning model is presented in a series of logical steps from identifying stakeholders to implementation of the final strategy. The necessary elements of a cohesive process with a solid foundation are presented, with the intention of building a sense of responsibility within the community for the planning process and the resulting strategy. Techniques to build this sense of responsibility and stewardship at the same time as the strategy is developed are explored.

Lemay, M.H. and Bacle, J.P. 1988. Designing and Implementing A Coastal Resource Management Program. Prepared for: The Coastal Resource Center, University of Rhode Island Narragansett, R.I.

Lemay, Michele H. 1989. Coastal Resources Management: A Guide to Public Education Programs and Materials. Kumarian Press. West Hartford, CT.

Lubke, R. 1994. Public Participation and Coastal Zone Management. The Naturalist. 38 pp. 1-34.

McCann, J. 1993. Coastal Zone Mangement for Samana Bay: Integrating Community Needs. Coastal Zone 93' Proceedings of the Eighth Symposium on Coastal and Ocean Manageement, New Orleans, Louisiana, July 19-23, 1993. American Society of Civil Engineers, New York, pp. 2369-2382.

Otto-Zimmermann, K. 1994. Local Implementation of Agenda 21. Marine Policy. 18 (2), pp. 112-115.

There is a weakness in the development of international environmental policy that was identified, but not sufficiently addressed, at the UN Conference on Environment and Development (UNCED) in June 1992. That weakness is the lack of a relationship between international environmental mandates and those who most often will be ultimately charged with their practical implementation; the local authorities of the world. The Advisory Committee on Protection of the Sea (ACOPS) has made great efforts to focus the international community on the practical realities of land-based marine pollution. The ever-growing partnership between ACOPS and the local government community gives hope that a practical and realistic marine protection alliance is taking shape.

Pagans, K. 1993. CommUNITY Partnerships: A Creative Approach to Coastal Resource Development. Trends. 30 (2). pp. 18.

Parks, D.L. 1991. Citizen Participation in Regional Planning Efforts. Coastal Zone 91' Proceedings of the Seventh Symposium on Ocean and Coastal Management Long Beach California, USA July 8-12, 1991. American Scciety of Civil Engineers, New York. pp. 41-55.

Rose, J.G., Grissom, T.A., and Carlock, J.M. 1995. Local government role in shoreline management In. Second . Annu. Marine and Estuarine Shallow Water Science and Management Conference. Atlantic City, NJ (USA), April 3-7.

The Commonwealth of Virginia, a signatory to the state-federal Chesapeake Bay Agreement, has developed several programs, including the cooperative state-local Chesapeake Bay Preservation Act (CBPA) program, to carry out its responsibilities under the Agreement. The CBPA requires local governments in Tidewater Virginia to incorporate shoreline issues, such as public and private access and shoreline erosion, and policies for managing them into their comprehensive plans. These policies are to reflect comprehensive inventories and analyses of shoreline conditions.

Renard, Y. 1986. Citizen Participation in Coastal Area Planning and Management. CAMP Newsletter October 1986. National Park Service, Office of International Affairs, Wash., DC. pp. 1-3.

Wernick, B G 1994 Community-based planning of marine protected areas The role of environmental non-governmental organizations. In. Coastal Zone Canada '94, Cooperation in the Coastal Zone. Halifax, NS, Canada, 1994. (eds. Wells, P.G. Ricketts, P.J.). pp. 529-535.

The Marine Life Sanctuaries Society of British Columbia (MLSS) is a non-profit ENGO that encourages community groups to become involved in preserving ocean resources for future generations. A tool MLSS will be able to use in the near future is Getting Below the Surface: A Guide to Establishing a Marine Protected Area in Your Community, which is based on a class project completed by a group of graduate students at the University of British Columbia. The short term goals for the use of this guide are to begin the process of establishing marine protected areas, to provide working models for future initiatives, and to contribute to the development of government policies. In the long term the use of the guide encourages continued community involvement to complement government initiatives.